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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/320,950	05/27/1999	JOHN N. GLOVER	105218-000004/US/2	5662
70155 7590 08/11/2011 GREENBERG TRAUIG (HOU) INTELLECTUAL PROPERTY DEPARTMENT 1000 Louisiana Street Suite 1700 Houston, TX 77002				
EXAMINER SORKIN, DAVID L.				
ART UNIT		PAPER NUMBER		
1774				
NOTIFICATION DATE		DELIVERY MODE		
08/11/2011		ELECTRONIC		

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JOHN N. GLOVER

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Appeal 2011-005284  
Application 09/320,950  
Technology Center 1700

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Before EDWARD C. KIMLIN, BEVERLY A. FRANKLIN, and  
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 59, 61-67 and 69-95. We have jurisdiction under 35 U.S.C. § 6(b).

Claim 59 is illustrative:

59. A method of fluid distribution in a chemical reactor comprising the steps of:

providing a layer of a plurality of ceramic filter units, at least some of the ceramic filter units including a body having a substantially annular outer peripheral shape, a central opening extending through the body, and at least three elliptical openings extending through the body and positioned between

the central opening and an outer periphery of the body so that a combination of the central opening and the at least three elliptical openings define a plurality of fluid flow passageways extending through the at least some of the plurality of ceramic filter units;

contacting an organic-based feed stream with the layer of the plurality of ceramic filter units; and

subdividing the organic-based feed stream into a plurality of smaller fluid streams by passing the organic-based feed stream through the plurality of fluid flow passageways prior to the organic-based feed stream contacting a catalyst bed in the chemical reactor.

The Examiner relies upon the following references in the rejection of the appealed claims (Ans. 3):

Kramer	4,615,796	Oct. 7, 1986
Hung	GE 3,539,195	May 7, 1986

Temple H. Fay, *A Three-Point Generalization of the Ellipse*, in 33 International Journal of Mathematical Education in Science and Technology Issue 1, 111-123 (2002).

James W. Fulton, *CE Refresher, Catalyst Engineering, Part 2: Selecting the Catalyst Configuration*, in Chemical Engineering 97-101 (1986).

Ivars Peterson, The Mathematical Association of America, *Beyond the Ellipse* (Sept. 2, 1996), [http://www.maa.org/mathland/mathland\\_9\\_2.html](http://www.maa.org/mathland/mathland_9_2.html) (hereafter "Peterson").

Appellant's claimed invention is directed to a method of fluid distribution in a chemical reactor that provides a plurality of ceramic filter units through which the feed passes before contacting a catalyst bed. Most claims on appeal define the filter units as having a central opening and at least three additional elliptical openings between the central opening and the

periphery of the filter unit. Appealed claim 89 does not require a central opening in the filter unit.

Claims 82-88 stand rejected under 35 U.S.C. § 112, first paragraph, written description requirement. The appealed claims stand rejected under 35 U.S.C. § 103(a) as follows:

- (a) claims 59, 61-67, 69-85, 94 and 95 over Kramer in view of Fulton,
- (b) claims 59, 61-67, 69-85, 94 and 95 over Kramer in view of Fulton and Hung,
- (c) claims 59, 61-67, 69-85, 94 and 95 over Kramer in view of Fulton and asserted admitted prior art (APA),
- (d) claims 86-93 over Kramer in view of Fulton, and
- (e) claims 86-93 over Kramer in view of Fulton and the asserted admitted prior art.

We have thoroughly reviewed the respective position advanced by Appellant and the Examiner. In so doing, we find ourselves in agreement with Appellant that the Examiner's rejections are not sustainable.

We consider first the Examiner's rejection of claims 82-88 under § 112, first paragraph. According to the Examiner, the originally filed application does not describe the corners of the filter units as "sharp". We agree with Appellant, however, that the drawings of the original Specification reasonably convey to one of ordinary skill in the art that filter units having sharp corners were in the possession of Appellant at the time of filing the present Application. *See*, for example, Figs. 6-11 and 13. Also, as pointed out by Appellant, Fulton and Hung, cited by the Examiner, use the language "sharp corners" to describe filter units which have peripheries similar in shape to those of the presently claimed invention.

The Examiner also maintains that the language of claims 86-88 does not have original descriptive support, namely, “a central opening extending through the body, and at least three trisoid-shaped openings extending through the body and positioned between the central opening and an outer periphery of the body”. However, paragraph [0059] of the original Specification describes a ceramic filter unit 15 having a circular shape and at least some elliptical shaped openings, and that “[t]risoidal shaped openings 87 may also be used (FIG. 14)”. We find that this portion of the Specification fairly describes filter units having a circular shape that may have either elliptical shaped openings 88 or trisoidal shaped openings 87. We do not subscribe to the Examiner’s position that the trisoidal shaped openings are only described for filter units having no central opening.

Turning to the § 103 rejections, we do not agree with the Examiner that Fulton would have suggested modifying Kramer such that the particularly disclosed filter units are replaced with filter units having the claimed configurations. Kramer is directed to filtering guard beds having diminishing diameters in the downward direction in order to protect the underlying catalyst bed from incoming solids in the feed. Kramer discloses that the guard beds preferably comprise spent catalyst particulate material, and that spherical particles are very much preferred, although “the guard bed particles can be in other configurations” (col. 4, ll. 3-4). Kramer provides no teaching that the particles of the guard beds may have a configuration that remotely resembles the claimed configurations. Also, Appellant has presented objective evidence that configurations within the scope of the appealed claims provide a design advantage that achieves superior lateral fluid distribution compared to other configurations.

Fulton discloses porous catalyst particles having configurations similar to those claimed. However, Fulton sets forth no teaching that the illustrated catalysts can be effectively used in guard beds of the type disclosed by Kramer which are situated over catalyst beds. Indeed, as noted by Appellant, Fulton provides a teaching away of using catalyst structures having sharp corners which would crumble in service and plug the spaces between catalyst particles. Hence, while one of ordinary skill in the art could have tried to use the catalyst configurations depicted by Fulton in the guard beds of Kramer, the Examiner has not established that the prior art would have provided the suggestion or motivation to do so with the requisite reasonable expectation of success.

Finally, the asserted APA does not alleviate the deficiency of the combination of Kramer and Fulton set forth above. In addition, Appellant has provided declaration evidence that the characterization of the ceramic wagon wheel unit as prior art was mistaken.

In conclusion, based on the foregoing, we are constrained to reverse the Examiner's rejections.

REVERSED

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